ENVIRONMENTAL CHEMISTS

Date of Report: 09/10/97 Date Received: 09/04/97

Project: Metro Self Monitor, PO #M60702

Date Samples Extracted: 09/04/97 Date Extracts Analyzed: 09/05/97

RESULTS FROM THE ANALYSIS OF THE WATER SAMPLE FOR CHROMIUM, COPPER, NICKEL, ZINC USING METHOD 6010

Samples Processed Using Method 3005A Results Reported as mg/L (ppm)

Sample ID	<u>Chromium</u>	<u>Copper</u>	<u>Nickel</u>	<u>Zinc</u>
M60702	1.2	1.0	0.80	0.09
Method Blank	< 0.05	< 0.05	< 0.05	< 0.05

ENVIRONMENTAL CHEMISTS

Date of Report: 09/10/97 Date Received: 09/04/97

Project: Metro Self Monitor, PO #M60702

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL METALS BY INDUCTIVELY COUPLED PLASMA (ICP) (METHOD 6010)

Laboratory Code: 709018-01 (Duplicate)

				Relative	
	Reporting	Sample	Duplicate	Percent	Acceptance
Analyte:	Units	Result	Result	Difference	Criteria
Chromium	mg/L (ppm)	1.2	1.2	0	0-20
Copper	mg/L (ppm)	1.0	0.98	2	0-20
Nickel	mg/L (ppm)	0.80	0.81	1	0-20
Zinc	mg/L (ppm)	0.09	0.09	0a	0-20

Laboratory Code: 709018-01 (Matrix Spike)

	Reporting	Spike	Sample	% R	ecovery	Acceptance	Relative Percent
Analyte:	Units	Level	Result	MS	MSD	Criteria	Difference
		1,450					
Chromium	mg/L (ppm)	5	1.2	98	109	80-120	11
Copper	mg/L (ppm)	5	1.0	90	103	80-120	13
Nickel	mg/L (ppm)	10	0.80	102	106	80-120	4
Zinc	mg/L (ppm)	5	0.09	111	110	80-120	1

Laboratory Code: Spike Blank

	Reporting	Spike	% R	ecovery	Acceptance	Relative e Percent
Analyte:	<u> Ûnits</u>	Level	MS	MSD	Criteria	<u>Difference</u>
Chromium	mg/L (ppm)	5	110	112	80-120	2
Copper	mg/L (ppm)	5	107	107	80-120	0
Nickel	mg/L (ppm)	10	113	114	80-120	1
Zinc	mg/L (ppm)	5	114	120	80-120	5

a - The analyte was detected at a level less than five times the detection limit. The RPD results may not provide reliable information on the variability of the analysis.

FRIEDMAN & BRUYA, INC. 3012 16th Avenue West seattle, WA 98119-2029 2007 285-8282

709018

MRK BI 3:00 Pm

SAMPLE CHAIN OF CUSTODY

Send Report To: A LASKAL Toppen Charles (ZEKALD Contact Address__ 98434 City, State, Zip Seattle 352-4309 Phone (26) 387-877 FAX # (2-6) PURCHASE ORDER # PROJECT NAME SITE NO. 7:38 meteo self m 60702 monitor PROJECT LOCATION SAMPLERS (signature) Boo 6th Ave 5. SAMPLE DISPOSAL INFORMATION KEMARKS Dispose after 30 days PLEASE Return Samples Call for Instructions Date/Time Type of # of Lab Analyses Sample # MR 4 Sampled Sample Jars Requested Sample # 709018 01 CR 420 1.60702 9:30 Am 3/1/6 CIJ W. 200 U9018-01 SIGNATURE PRINT NAME COMPANY Date Time Kaminish gut by 5-4-57 2:7072 necessed by 2:43 Pm Resinquished by: Received by:

makMS.COC

06/09/97

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D. Charlene Jensen, M.S. Bradley T. Benson, B.S. Kurt Johnson, B.S. 3012 16th Avenue West Seattle, WA 98119-2029 TEL: (206) 285-8282 FAX: (206) 283-5044 e-mail: fbi@isomedia.com

September 10, 1997

DUPLICATE COPY

INVOICE #97ACU0910-1

Accounts Payable Alaskan Copper Works 628 South Hanford St. Seattle, WA 98134

RE: Project Metro Self Monitor, PO #M60702: Results of testing requested by Gerry Thompson for material submitted on September 4, 1997.

FEDERAL TAX ID # (b) (6)

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D. Charlene Jensen, M.S. Bradley T. Benson, B.S. Kurt Johnson, B.S. 3012 16th Avenue West Seattle, WA 98119-2029 TEL: (206) 285-8282 FAX: (206) 283-5044 e-mail: fbi@isomedia.com

September 10, 1997

Gerry Thompson, Project Manager Alaskan Copper Works 628 South Hanford St. Seattle, WA 98134

Dear Mr. Thompson:

Included are the results from the testing of material submitted on September 4, 1997 from your Metro Self Monitor, PO #M60702 project.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Kurt Johnson Chemist

Enclosures ACU0910R.DOC

ENVIRONMENTAL CHEMISTS

Date of Report: 09/10/97 Date Received: 09/04/97

Project: Metro Self Monitor, PO #M60702

Date Samples Extracted: 09/04/97 Date Extracts Analyzed: 09/05/97

RESULTS FROM THE ANALYSIS OF THE WATER SAMPLE FOR CHROMIUM, COPPER, NICKEL, ZINC USING METHOD 6010

Samples Processed Using Method 3005A

Results Reported as mg/L (ppm)

Sample ID	Chromium	Copper	<u>Nickel</u>	<u>Zinc</u>
M60702	1.2	1.0	0.80	0.09
Method Blank	<0.05	<0.05	<0.05	<0.05

ENVIRONMENTAL CHEMISTS

Date of Report: 09/10/97 Date Received: 09/04/97

Project: Metro Self Monitor, PO #M60702

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL METALS BY INDUCTIVELY COUPLED PLASMA (ICP) (METHOD 6010)

Laboratory Code: 709018-01 (Duplicate)

	Reporting	Sample	Duplicate	Relative Percent		Acceptance
Analyte:	Units	Result	 Result	Difference	3-17	Criteria
Chromium	mg/L (ppm)	1.2	1.2	0		0-20
Copper	mg/L (ppm)	1.0	0.98	2		0-20
Nickel	mg/L (ppm)	0.80	0.81	1		0-20
Zinc	mg/L (ppm)	0.09	0.09	0a		0-20

Laboratory Code: 709018-01 (Matrix Spike)

	n	O., 11.	C1-	0/ D			Relative
Analyte:	Reporting Units	Spike Level	Sample Result	MS MS	ecovery <u>MSD</u>	Acceptance Criteria	Percent Difference
Chromium	mg/L (ppm)	5	1.2	98	109	80-120	11
Copper	mg/L (ppm)	5	1.0	90	103	80-120	13
Nickel	mg/L (ppm)	10	0.80	102	106	80-120	4
Zinc	mg/L (ppm)	5	0.09	111	110	80-120	1

Laboratory Code: Spike Blank

	Reporting	Spike	% Re	ecovery	Acceptance	Relative Percent
Analyte:	Units	Level	MS	MSD	Criteria	Difference
Chromium	mg/L (ppm)	.5	110	112	80-120	2
Copper	mg/L (ppm)	5	107	107	80-120	0
Nickel	mg/L (ppm)	10	113	114	80-120	1
Zinc	mg/L (ppm)	5	114	120	80-120	5

a - The analyte was detected at a level less than five times the detection limit. The RPD results may not provide reliable information on the variability of the analysis.

ENVIRONMENTAL CHEMISTS

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September 10, 1997

DUPLICATE COPY

INVOICE # 97ACU0910-1

Accounts Payable Alaskan Copper Works 628 South Hanford St. Seattle, WA 98134

RE: Project Metro Self Monitor, PO #M60702: Results of testing requested by Gerry Thompson for material submitted on September 4, 1997.

1 water sample analyzed for Chromium, Copper, Nickel, and Zinc using Method 6010 @ \$65 per sample \$65.00

Amount Due \$65.00

FEDERAL TAX ID #(b) (6)

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D. Charlene Jensen, M.S. Bradley T. Benson, B.S. Kurt Johnson, B.S.

3012 16th Avenue West Seattle, WA 98119-2029 TEL: (206) 285-8282 FAX: (206) 283-5044 e-mail: fbi@isomedia.com

September 10, 1997

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Sincerely,

FRIEDMAN & BRUYA, INC.

Kurt Johnson Chemist

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